

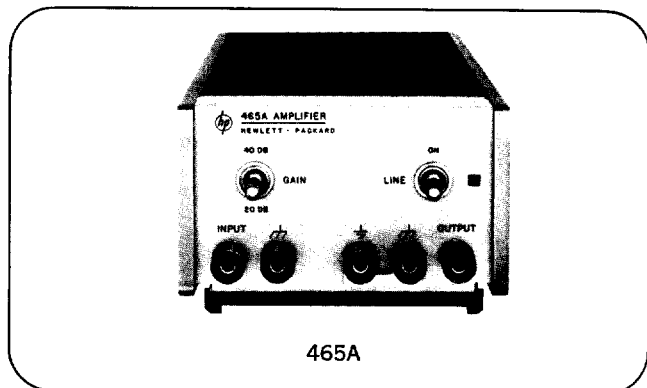
AMPLIFIERS



SOLID-STATE AMPLIFIERS

Precision general-purpose amplifiers

Models 465A, 467A



HP 465A Amplifier

The HP Model 465A is a general-purpose amplifier and an excellent impedance converter (10 megohms to 50 ohms). This amplifier has extremely stable 20 dB or 40 dB gain over a continuous frequency range of 5 Hz to 1 MHz. Either gain may be selected rapidly with a switch on the front panel.

This solid-state amplifier is ideal for increasing the power output of solid-state oscillators or amplifiers. The output stage

provides low-output impedance and wide dynamic range. The HP 465A is a three-terminal device isolated from chassis and may be floated up to 500 volts dc above chassis ground.

465A Specifications

Voltage gain: 20 dB (X10) or 40 dB (X100), open circuit.

Gain accuracy: ± 0.1 dB ($\pm 1\%$) at 1000 Hz.

Frequency response: ± 0.1 dB, 100 Hz to 50 kHz < 2 dB down at 5 Hz and 1 MHz.

Output: > 10 volts rms open circuit; > 5 volts rms into 50 ohms (0.5 watt).

Distortion: $< 1\%$, 10 Hz to 100 kHz, $< 2\%$, 5 Hz to 10 Hz and 100 kHz to 1 MHz.

Input impedance: 10 megohms shunted by < 20 pF.

Output impedance: 50 ohms.

Noise: < 25 μ V rms referred to input (with 1 megohm source resistance).

Temperature range: 0 to $+50^\circ\text{C}$.

Power: 115 or 230 V $\pm 10\%$, 50 to 400 Hz, 10 watts at full load.

Dimensions: $5\frac{1}{8}$ " wide, 3" high (without removable feet), 11" deep (130 x 76 x 279 mm).

Weight: net: 4 lbs (1.8 kg) shipping: 6 lbs (2.7 kg).

Price: HP 465A, \$210.

HP 467A Amplifier/Power Supply

The solid-state HP 467A Power Amplifier/Supply is a 10-watt peak power amplifier and -20 to $+20$ volt dc power supply. The power amplifier has a wide bandwidth and low dc drift, suitable for many applications wherever a power source is required. Unique features are low distortion ($< 0.01\%$), low drift and high-gain accuracy.

An output greater than ± 20 volts peak and ± 0.5 A peak is available from dc up to 1 MHz. At full output the distortion of the 467A is less than 3% up to 1 MHz. The amplifier is a three-terminal device isolated from chassis and may be floated up to 200 volts dc above chassis ground.

467A Specifications

Power amplifier

Voltage gain (non-inverting): fixed steps: X1, X2, X5, X10.

Variable: 0-10 resolution is better than 0.1% of full output.

Accuracy: $\pm 0.3\%$ from dc to 10 kHz; $\pm 1.0\%$ from 10 kHz to 100 kHz; $\pm 10\%$ from 100 kHz to 1 MHz with load of > 40 ohms.

Output: ± 20 V peak at 0.5 A peak.

Distortion: $< 0.01\%$ at 1 kHz; $< 1\%$ at 100 kHz; $< 3\%$ at 1 MHz.

Input impedance: 50k ohms shunted by 100 pF.

DC power supply

Voltage range: $> \pm 20$ V, ± 10 V, ± 4 V, ± 2 V, ± 1 V; with adjustable vernier. Resolution: better than 0.1% of full output.

Current: ± 0.5 A peak.

Load regulation: (front panel) < 10 mV, no load to full load.

Line regulation: < 10 mV for a $\pm 10\%$ change in line voltage.

General

Output impedance: (front panel): 5 M Ω in series with 1 μ H.



Capacitance load: 0.01 μ F or less does not cause instability.

Ripple and noise: < 5 mV p-p (referred to output) for amplifier and power supply.

Current limit: < 800 mA.

Temperature coefficient: $< \pm 0.05\%$ / $^\circ\text{C}$ of output or ± 2 mV/ $^\circ\text{C}$ at output, whichever is greater.

Input-output terminals: front panel: $\frac{3}{4}$ " spaced banana terminals for input, output, and chassis. Rear panel: BNC terminals. Circuit ground can be floated 200 V dc above chassis ground.

Operating temperature range: 0 to $+50^\circ\text{C}$.

Power required: 115 or 230 V $\pm 10\%$, 50-400 Hz; < 35 W, full load.

Dimensions: $5\frac{1}{8}$ " wide, $6\frac{1}{4}$ " high (without removable feet), 11" deep (130 x 159 x 279 mm).

Weight: net: 10 lbs (4.5 kg); shipping: 16 lbs (7.2 kg).

Price: HP 467A, \$595.